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B– Theoretical Sciences

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B– Teorik Bilimler

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Izadpanahi S., Ozcinar C., Anbarjafari G. and Demirel H. Resolution enhancement of video sequences by using discrete wavelet transform and illumination compensation. *Turk J. Elec. Eng. & Comp. Sci.* 2012; 20: 1268-1276.

Books

Haupt R.L. and Haupt S.E. *Practical Genetic Algorithms*. 2nd ed. New York, NY, USA: Wiley, 2004.

Kennedy J. and Eberhart R. *Swarm Intelligence*. San Diego, CA, USA: Academic Press, 2001.

Chapters in books

Poore J.H., Lin L., Eschbach R. and Bauer T. Automated statistical testing for embedded systems. In: Zander J., Schieferdecker I., Mosterman P.J., editors. *Model-Based Testing for Embedded Systems*. Boca Raton, FL, USA: CRC Press, 2012. pp. 111-146.

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Li R.T.H. and Chung S.H. Digital boundary controller for single-phase grid-connected CSI. In: *IEEE 2008 Power Electronics Specialists Conference*; 15–19 June 2008; Rhodes, Greece. New York, NY, USA: IEEE. pp. 4562-4568.

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